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Rev. First emission - 23/09/2010

RAFFAELLO Automatic stainer for histological and cytological samples

CE IVD

Automatic stainer BASIC code 53COL01

Automatic stainer with FMC (Fast Maintenance Check) ADVANCED code 53COL02

Temporary image of RAFFAELLO automatic stainer

General features

RAFFAELLO is a compact and user-friendly stainer intended for histological section and cytological sample stainings.

State-of-art, it allows to obtain stainings using the optimized protocols Hematoxylin- Eosin and Papanicolaou, thanks also to the dedicated reagents set.

Using OTTIX Shaper and OTTIX Plus it is possible to decrease the necessary reagents quantity and, since OTTIX is toxicity-free, it is also possible to reduce the chemical risk in your lab.

RAFFAELLO perfoms not only standard and optimized histological and cytological staining protocols, but also customized protocols to obtain particular results.

It allows to perform up to 3 stainings simultaneously with compatible protocols.

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Facilities:

- Hematoxylin-Eosin stainings
- Papanicolaou stainings
- Slide washing with water automatic charge and flow regulation
- Staining with using of covers for reagent basins
- Sunction and filtration of toxic-harmful fumes with activated charcoal filters

Capacity and productivity:

- Possibility to use racks with different capacities: 10, 20, 30 slides
- Possibility to perform up to 3 compatible protocols simultaneously
- Productivity with optimized Hematoxylin-Eosin protocol: about 110 slides/hour, in racks of 30 slides carrier capacity
- Productivity with optimized Papanicolaou protocol: about 90 slides/hour, in rack of 30 slides carrier capacity
- Possibility to set priority reagent basin for emergencies management (STAT)
- Possibility to perform staining runs without covers using to reduce moving times

Installation:

- Benchtop, minimum capacity 100 Kg/mq, leveled base and settable stems
- Necessary running water feeding, DN 15 with hose nozzle connection, pressure min. 3 Bar, max. 6 Bar
- Necessary hydraulic dump for stainers, DN 15 hose nozzle connection
- Support base minimum dimension 1350Lx650Dx700H mm

Maintenance:

cod. 53COL01 RAFFAELLO BASIC

- Weekly and monthly set, according to directions written in user manual.

cod. 53COL02 RAFFAELLO ADVANCED

The software and the stainer control electronics integrate FMC (Fast Maintenance Check) option that checks and manages the periodical maintenance necessary to ensure an high security and qualitative standard CE-IVD certificated.

The software notifies and requires the periodical Maintenance KIT installation.

The internal electronics checks and manages the right KIT installation, excluding the stainer usage in uncertificated conditions and ensuring replaced components authenticity and operator's safety.

Consume dedicated products: (only for ADVANCED RAFFAELLO cod. 53COL02)

RAFFAELLO Staining KIT, for 1000 H&E test

standard composition:

- Ottix plus,
- Ottix shaper,
- Hematoxylin, choice of (Carazzi, Gill I, Gill II, Harris, Mayer)
- Eosin, choice of (Floxin, alcolica, alcoholic HB , watery, watery HB)

Hematoxylin / Eosin

RAFFAELLO Staining KIT, for 1000 PAPANICOLAOU test

standard composition:

- Ottix plus
- Ottix shaper
- Hematoxylin, choice of (Gill II, Harris)
- Stainers, choice of (EA31, EA50, EA50 Ultra Bright, EA65 Ultra Bright)

RAFFAELLO Mounting KIT, for 1000 test

standard composition:

- Diamount, mounting media xilolo free
- coverglass, 24x50mm or 24x60mm

RAFFAELLO Maintenance KIT (cod. SDKRA1000)

Maintenance KIT contains parts requiring replacement:

- assorbent pad (to put on the automatic) 100 pcs
- activated charcoal filters 3 pcs
- running water supply piping
- washing water discharge piping
- washing water supply control electrovalve
- smartcard with maintenaince status updating electronic chip

** For further information concerning RAFFAELLO Staining KIT composition, see the relative security and data sheets. Indications reported in the current data sheet are indicative of the available KIT range studied for RAFFAELLO Advanced.*

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USING FEATURES

Raffaello v0.2: Stato macchina
DIAPATH
1 1 MICROCLEARING RUN -2:28 0:10
2 2 OTTIX PLUS.1 - 1:00 0:10
3 3 OTTIX SHAPER.1 - 1:00 0:10
4 4 OTTIX SHAPER.2 - 1:00 0:10
5 8 H2O 1 - 2:00 0:10
6 5 EMATOSSILINA - 4:00 0:10
7 8 H2O 3 - 5:00 0:10
1 EMATOSSILINA E RUNMICROCLEARIN 13:56 14:23
Avvia
Interrompi
Menu

(1)

Staining protocols programming (1)

Modern stainer controlled by a software that allows to manage all standard and advanced facilities for histological and cytological stainings.

Staining protocols saved on the control PC.
Staining starting up selectioning the protocol and pushing the Start key on the Touch Screen panel.

Saving of all necessary protocols through the software interface, setting in a different way: steps number, used reagent, staining times, dropping time, cover use and priority reagent basin.

Possibility to perform up to 3 stainings simultaneously, with compatible protocols, or using the same reagents.

Reagents management

Index entering of each stainer and reagent used in the staining protocols. Registration of: name, position or associated basin and cover association during the staining.

Definition of reagent name by the operator, in large or reduced way, according to the needs. The name defined in the reagent index is available in all performed stainings. Every time it is possible to link the basin to the performing protocol step.

RAFFAELLO saves in the index more reagents than those really used. In this way, during the protocol change, it is possible to start up the staining and confirm the real basins change to obtain an updated situation of the used reagents and stainers.

Possibility to associate cover presence on the basin, according to the reagent volatility features. Selectioning the dedicated option, the robotized arm of RAFFAELLO, automatically, will move away the cover before perfoming the staining and after rack moving will put it back.

(2)

Reagents charge and discharge (2)

Counting of the performed immersion number for each started up staining thanks to the Reagent Managing System.

Reagent exhaustion alarm thresold, with acoustic and visual alarm, settable for each reagent according to the reagent managing used in your lab.

Rack immersion counting zeroing, in accordance with reagent change in the basin.

Possibility to check in every time the number of reagent immersions both performed and both to be performed.

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Raffaello v
1 2 3 4 5 6 7 8 9 10 11 12 13 14
Passo Fn Cov Reagente Post. T.Imm. T.Sgocc.
1 MICROCLEARING 1 2:30 0:10
2 OTTIX PLUS.1 2 1:00 0:10
3 OTTIX SHAPER.1 3 1:00 0:10
4 OTTIX SHAPER.2 4 1:00 0:10
5 H2O 1 - 2:00 0:10
6 EMATOSSILINA 5 4:00 0:10
7 H2O 3 - 5:00 0:10
Avvia
Annulla

(3)

Priority time staining (3)

Advanced software function f or the staining t ime calculation.

Absolute respect warranty of rack immersion time in the used reagent and stainer, thanks to the priority reagent basin option.

TIME OVER display and acoustic alarm, when set staining time is different from those prefixed and parameterized.

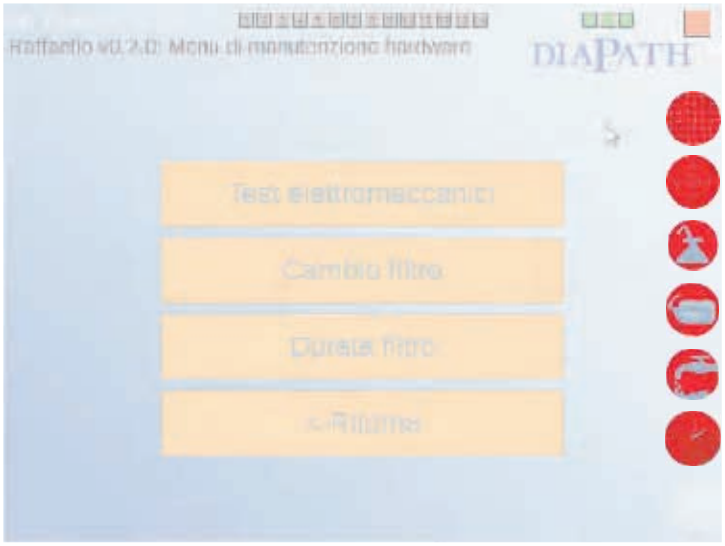
Cover management (4)

Exclusive staining managemet with r eagent basins and dedicated covers.

Possibility to define in the Reagent Management System which reagents are equipped with cover.

This option decreases t he evaporation of more v olatile reagents; reducing the dispersion of toxic, ha rmful o r irritating for the respiratory tracts vapours.

(4)



(5)

Alarm management (5)

Alarm display through video icon and acoustic advise to draw operator's attention.

Date and hour saving of alarm advise.

The saved alarms concerns:

- activated charcoal filters expiry date
- mechanical positioning alarm
- exhausted reagents and stainers
- staining door opening
-washing basin high level
- time over in the staining protocol

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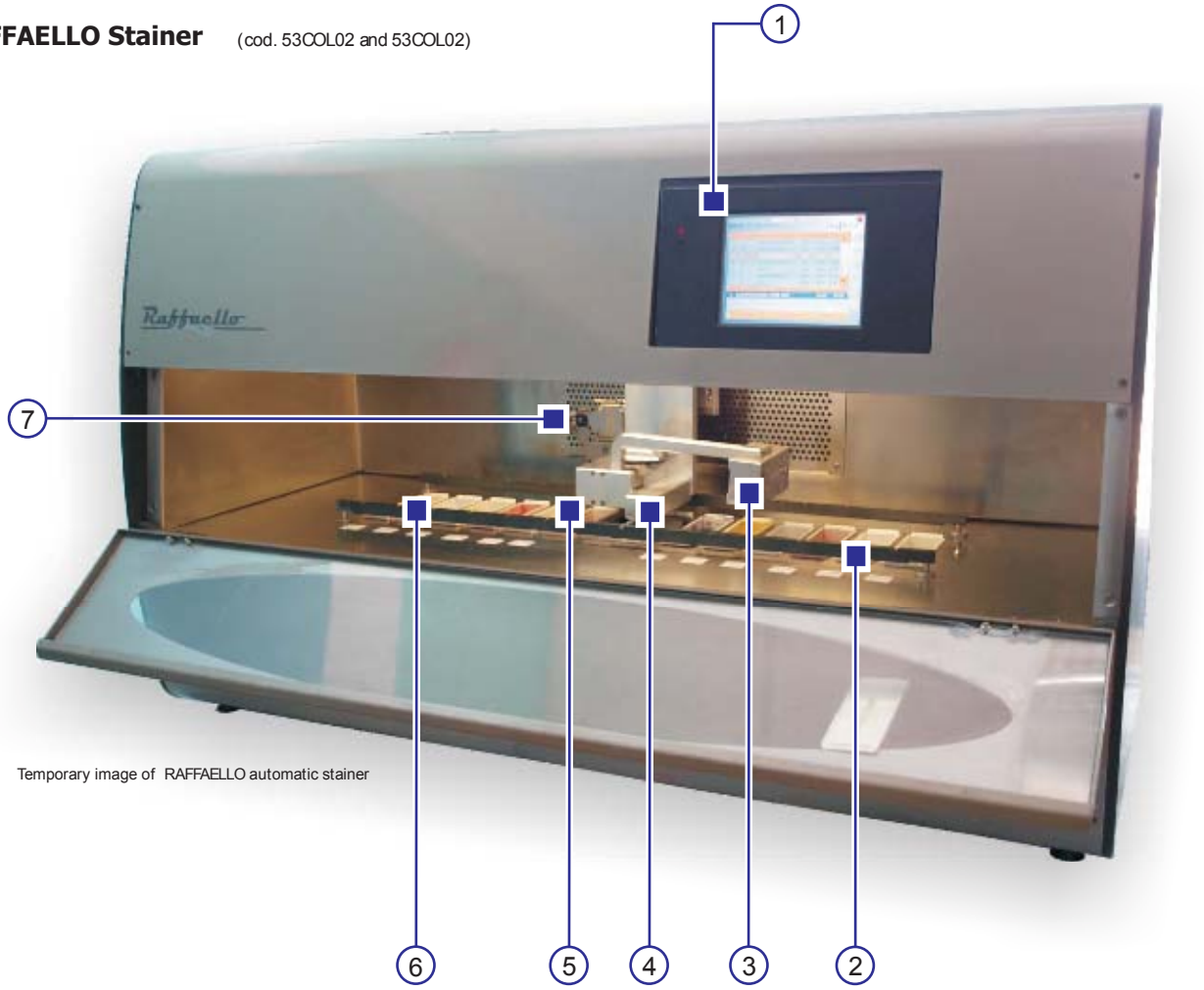
RAFFAELLO Stainer (cod. 53COL02 and 53COL02)



Temporary image of RAFFAELLO automatic stainer

1. Control unity type PC with colour panel LCD touch screen

   - Pentium processor
   - Linux Embedded operative system
   - Memory system, extractable compact flash for software updatings
   - Integrated LCD panel
   - USB port for software upgrade and data saving as: stainings protocols, reagents index, diagnostic log

2. Agitation system available for every immersion rack
3. Electromagnetic arm for covers (if available)
4. Electromagnetic system for racks
5. Reagent basins, PE printed, capacity 400 ml. 1 rack of 30 slides carrier capacity
6. Slide water washing basin, 2 racks of 30 slides carrier capacity, settable water flow through manual valve
7. Activated charcoal filter batteries to vapour adsorption of not covered reagents
8. Electric supply switch and automatic arm emergency stop botton

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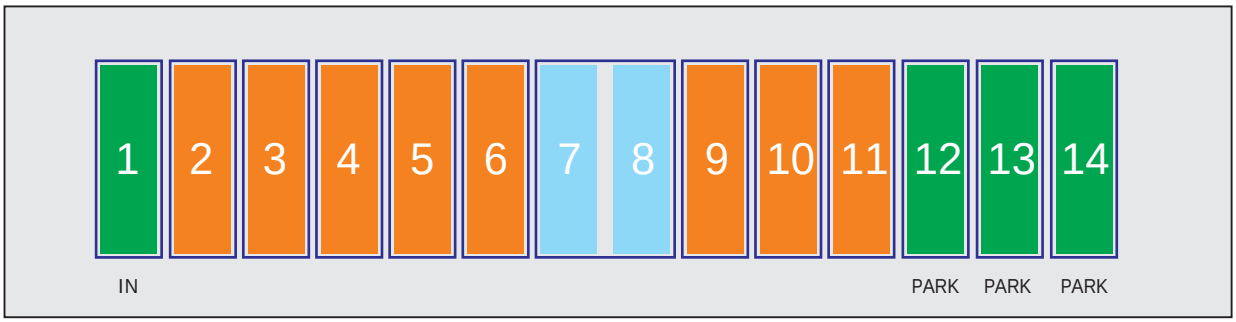
APPLICATIONS AND REAGENTS:

Basins illustration:

1 Rack entering basin
2 - 6 Stainer/reagent basins
9-11 Stainer/reagent basins
7 - 8 Washing basins with running water
12-14 Stained slide deposit basins



Hematoxylin - Eosin

1	Ottix Plus
2	Ottix Plus
3	Ottix Shaper
4	Ottix Shaper
5	Hematoxylin
6	Eosin
7	Water
8	Water
9	Ottix Shaper
10	Ottix Plus
11	Ottix Plus
12	Ottix Plus
13	Ottix Plus
14	Ottix Plus

Papanicolau

1	Distilled water
2	Hematoxylin
3	Ottix Shaper
4	OG6
5	Ottix Shaper
6	Ottix Shaper
7	Running water
8	Running water
9	EA 50
10	Ottix Shaper
11	Ottix Shaper
12	Ottix Plus
13	Ottix Plus
14	Ottix Plus

Available accessories

Code:	Description
53ESTXCA011	Water basin with valve (for slides rack washing)
53STX02	440 ml reagent basin in printed PET
53STX04	440 ml basin cover in printed PET (with magnet)
SDSVI1000	440 ml stainless steel reagent basin
SDSVI1100	Set of 12 440 ml stainless steel reagent basins
53CV30	Plastic made rack for 1X3" slides
53STX01/20	Handle for 20 slide rack (cod. 53CV30)
53STX01/30	Handle for 30 slide rack (cod 53CV30)
53STX10	Automatic arm absorbent pad, packaging 100 pz.
SDSRA1001	Collecting shelf for reagent dropping
BE049	CleanPath detergent for steel surfaces

Technical features:

Instrument type:	Automatic stainer
Samples typology:	Histological tissues and cytological samples
Slide productivity:	Using protocol: Hematoxylin & Eosin 100 slides/hour Papanicolaou 100 slides/hour
Storable protocol number:	Unlimited
Reagent basins number :	9 basins with 1 rack of 30 slide carrier capacity
Washing basins number:	1 stainless steel basin with 2 racks of 30 slide carrier capacity
Charge position:	1 basin with 1 rack of 30 slide carrier capacity
Deposit basin position:	3 basins with 1 rack of 30 slide carrier capacity
Reagent vapours treatment:	Dedicated activated charcoal filter, with forced ventilation
Electric feeding:	110-240 Vac 50-60Hz 160Watt

Dimension and weight:

Dimension:	1150Lx500Px640H mm
Bulk:	1350Lx650Px700H mm
Dry-weight:	70 Kg

Available models:

cod. 53COL01	RAFFAELLO BASIC automatic stainer
cod. 53COL02	RAFFAELLO ADVANCED automatic stainer with FMC (Fast Maintenance Check), including optimized protocols pre-loaded in the software of control. Through HELP DESK phone service , skilled staff is at disposal for any suggestions and istructions concerning the use of the Staining KIT and of optimized protocols.